

Serial No. 10/820,665
998045 PA3

AMENDMENTS TO THE CLAIMS

Please cancel claims 1-8, and 9. Please amend claims 10, 16 and 17 as follows.

Claims 1 - 9 (Canceled).

10. (Currently Amended) ~~The TML vibrator-speaker multifunctional transducer of claim 9~~ A twin magnetic loop ("TML") vibrator-speaker multifunctional transducer, comprising:
a bowl-shaped magnetic transfer having a flange (6), having a first top side and a bottom side;
a cylindrical magnet (5);
a disc-shaped pole core (4), said pole core being placed on the cylindrical magnet and centered in the bowl-shaped magnetic transfer on the top side, forming an inner magnetic loop;
an annular pole piece (8);
an annular magnet (7), having an inward surface and an outward surface, said annular magnet overlaying the annular pole piece and being placed on the bottom side of the flange of the bowl-shaped magnetic transfer, forming an outer magnetic loop,
wherein said inner magnetic loop and outer magnetic loop are integrated,
wherein the cylindrical and annular magnets are elliptical column and elliptical ring in shape, the spacing between the magnets are elliptical rings in shape; and the voice coil, the vibrating coil, the pole core, the magnetic transfer, the annular pole piece and the resilient plate are also elliptical in shape;
further comprising:
a housing supporting base (9); and
an annular resilient plate (3) connecting to the flange at the top side of the bowl-shaped magnetic transfer,
wherein said the disc-shaped pole core, the bowl-shaped magnetic transfer, the annular pole piece, the cylindrical magnet and the annular magnet are coupled to the housing supporting base via the annular resilient plate.

Serial No. 10/820,665
998045 PA3

11. (Previously Added) The TML vibrator-speaker multifunctional transducer of claim 10, further comprising:
a vibrating coil (10), said vibrating coil being placed between the bottom side of the bowl-shaped magnetic transfer and the inward surface of the annular magnet;
a rigid sheet (11), said rigid sheet being connected to the vibrating coil at the center of the rigid sheet, said rigid sheet joining the supporting support base at the perimeter of the rigid sheet.
12. (Previously Added) The TML vibrator-speaker multifunctional transducer of claim 10, further comprising:
a voice coil (2);
a vibrating diaphragm (1), said voice coil joining said vibrating diaphragm at the center of the vibrating diaphragm, for placing said voice coil into a spacing of the inner magnetic loop so as to produce sound.
13. (Previously Added) The TML vibrator-speaker multifunctional transducer of claim 12, wherein the vibrating diaphragm used to emit sound is made of one of a polyester film, a perm alloy plate and other voice diaphragm materials.
14. (Previously Added) The TML vibrator-speaker multifunctional transducer of claim 10, wherein the inherent resonant frequency of the magnetic loop, the voice coil and the vibrating diaphragm for sound function, is preset a value above 400HZ.
15. (Previously Added) The TML vibrator-speaker multifunctional transducer of claim 11, wherein the inherent resonant frequency of the vibrating coil, the resilient plate and the TML for performing vibrating function, is between 100-200HZ.

Serial No. 10/820,665
998045 PA3

16. (Currently Amended) ~~The TML vibrator-speaker multifunctional transducer of claim~~
9 A twin magnetic loop ("TML") vibrator-speaker multifunctional transducer, comprising:
a bowl-shaped magnetic transfer having a flange (6), having a first top side and a bottom
side;
a cylindrical magnet (5);
a disc-shaped pole core (4), said pole core being placed on the cylindrical magnet and
centered in the bowl-shaped magnetic transfer on the top side, forming an inner magnetic loop;
an annular pole piece (8);
an annular magnet (7), having an inward surface and an outward surface, said annular
magnet overlaying the annular pole piece and being placed on the bottom side of the flange of the
bowl-shaped magnetic transfer, forming an outer magnetic loop,
wherein said inner magnetic loop and outer magnetic loop are integrated,
wherein:
the magnets are elliptical column and elliptical ring in shape;
the spacing between the magnets are elliptical rings in shape; and
the voice coil, the vibrating coil, the pole core, the magnetic transfer, the annular pole
piece and the resilient plate are also elliptical in shape.

Serial No. 10/820,665
998045 PA3

17. (Currently Amended) A twin magnetic loop ("TML") vibrator-speaker multifunctional transducer, comprising:

a bowl-shaped magnetic transfer having a flange (6), having a first top side and a bottom side;

a cylindrical magnet (5);

a disc-shaped pole core (4), said pole core being placed on the cylindrical magnet and centered in the bowl-shaped magnetic transfer on the top side, forming an inner magnetic loop;

an annular pole piece (8);

an annular magnet (7), having an inward surface and an outward surface, said annular magnet overlaying the annular pole piece and being placed on the bottom side of the flange of the bowl-shaped magnetic transfer, forming an outer magnetic loop, wherein said inner magnetic loop and outer magnetic loop are integrated, wherein:

the cylindrical and annular magnets are elliptical column and elliptical ring in shape;

the spacing between the cylindrical and annular magnets are elliptical rings in shape; and

the voice coil, the vibrating coil, the pole core, the magnetic transfer, the annular pole piece and the resilient plate are also elliptical in shape;

a housing supporting base (9);

an annular resilient plate (3) connecting to the flange at the top side of the bowl-shaped magnetic transfer, wherein said the disc-shaped pole core, the bowl-shaped magnetic transfer, the annular pole piece, the cylindrical magnet and the annular magnet are coupled to the housing supporting base via the annular resilient plate;

a voice coil (10), said voice coil being placed between the bottom side of the bowl-shaped magnetic transfer and the inward surface of the annular magnet;

a vibrating diaphragm (11), said vibrating diaphragm being connected to the voice coil at the center of the vibrating diaphragm, said vibrating diaphragm joining the supporting support base at the perimeter of the vibrating diaphragm;

a vibrating coil (2);

a rigid sheet (1), said vibrating coil joining said rigid sheet at the center of the rigid sheet, for placing said vibrating coil into a spacing of the inner magnetic loop so as to produce sound.